

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Claims 1-5 have been canceled in favor of new claims 6-10. Support for the subject matter of the new claims is provided for example in the original claims.

New claim 10 recites an input control method for inputting data to a turbo coder. The Office Action rejected canceled claim 5, under 35 USC 101, for reciting a method that was not tied to a "thing or product" (see Office Action Section 1). Claim 10 expressly ties the claimed method to a turbo coder, which meets the requirement of a "thing or product." Accordingly, the Applicant submits that the 35 USC 101 rejection is not applicable to new claim 10.

Claims 1 and 5 were rejected, under 35 USC §102(b), as being anticipated by Osthoff et al. (US 6,126,310). Claims 2-4 were rejected, under 35 USC §103(a), as being unpatentable over Osthoff in view of Tong et al. (US 7,072,307). To the extent these rejections may be deemed applicable to new claims 6-10, the Applicant respectfully traverses based on the following points.

Claim 6 defines an input control apparatus for a turbo coder that discards systematic and parity bits of a data sequence so that the sequence has fewer parity bits than systematic bits. The claimed subject matter provides an advantage of supporting reduction in memory requirements for storing data that is input to a turbo coder without increasing the coding rate (see specification page 5, line 17, through page 6, line 7). (References herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

Osthoff discloses receiving a systematic code word having information bits and parity bits and using the received parity bits to detect and correct errantly received information bits (see Osthoff col. 5, line 65, through col. 6, line 34) . Osthoff also discloses that the parity bits may be generated and transmitted multiple times to a receiver for correcting the errantly received information bits (see col. 6, lines 40-50). If the received information bits have too many errors to be corrected using the parity bits or the error correction process is too slow using the regenerated parity bits, then both the information bits and parity bits may be retransmitted in response to an automatic retransmission request made by the receiver (see col. 6, lines 51-61).

As may be determined from the discussion of Osthoff's disclosure provided above, Osthoff does not disclose an input control apparatus for a turbo coder that discards systematic and parity bits of a data sequence so that the sequence has fewer parity bits than systematic bits. And Tong is not cited in the Office Action for supplementing the teachings of Osthoff in this regard.

Accordingly, the Applicant submits that Osthoff and Tong, considered individually or in combination, do not anticipate or render obvious the subject matter defined by new claim 6. Independent claim 10 similarly recites the above-mentioned subject matter distinguishing apparatus claim 6 from the applied references, but with respect to a method. Therefore, allowance of claims 6 and 10 and all claims dependent therefrom is warranted.

To promote a better understanding of the patentable distinctions of the claimed subject matter over the teachings of the applied references, the Applicant provides the following additional remarks.

Claim 6 recites discarding bits in the last (i.e., second) half of a systematic part and bits in the last halves of parity parts comprising a plurality of sequences, the systematic part and parity parts being received as input in a turbo decoder. The number of bits to discard is controlled such that the number of bits in one sequence of the parity parts after the discarding is less than the number of bits in the systematic part after the discarding. This subject matter supports an advantage of enabling decoding calculation in the turbo decoder with a smaller number of bits, so that the memory capacity required in this calculation is reduced and the circuit scale is reduced.

Osthoff discloses reordering information bits into the order they had before being transmitted by a transmitter and overwriting the correct information bits in an error correction process. Parity bits are generated and transmitted by the transmitter, because the information bits that are decoded are the original information bits. Furthermore, Osthoff discloses that, when an error detecting means in the receiving apparatus detects an error with information bits stored in the receiving end, the transmitting apparatus is requested to generate and transmit parity bits that form a set with the information bits.

Tong discloses, in Fig. 2, maintaining a fixed coding rate even when a data transmission rate varies. When the data transmission rate increases, the E_b/N_0 that is necessary to achieve the required BER is increased. Tong furthermore discloses that, when a transmission fails due to an insufficient carrier-to-interference ratio (C/I), a retransmission is performed at lower speed, so that the BER decreases less and the likelihood the retransmission will succeed increases.

The invention of new claim 6 and Osthoff share in common controlling information bits and parity bits. However, Osthoff discloses HARQ and bears no relationship to the art of discarding information bits and parity bits before they are inputted to a turbo decoder.

Furthermore, nowhere in Tong is the relationship between information bits and parity bits, in terms of the number of bits to discard, disclosed or suggested.

By contrast with the above, the invention according to new claim 6 is directed to, as mentioned above, discarding bits in the last half of a systematic part and bits in the last halves of parity parts comprising a plurality of sequences, before the systematic part and parity parts are received as input in a turbo decoder. The present claimed invention functions without respect to HARQ and therefore is different from the art Osthoff and Tong disclose. Claim 10 similarly recites this subject matter, as do the dependent claims.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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